

Complete bilateral horizontal internuclear ophthalmoplegia as a sign of multiple sclerosis relapse[☆]

Oftalmoplejía internuclear horizontal bilateral completa; síntoma de presentación de un brote de esclerosis múltiple

Dear Editor:

We present the case of a 63-year-old woman who had been diagnosed 4 years earlier with multiple sclerosis (MS) according to McDonald criteria due to a clinically isolated demyelinating syndrome and MRI findings of multiple cerebral and brainstem lesions compatible with demyelinating aetiology.

She returned to the clinic due to experiencing poor balance and vision changes consisting of diplopia and loss of voluntary gaze; symptoms had begun 15 days before.

Neurological examination revealed total horizontal ophthalmoplegia (lack of saccades and gaze following; no eye movements with doll's head manoeuvre). Convergence was preserved and there were no limits along the vertical axis and no associated pupil changes; nystagmus appeared with upgaze. We observed no facial weakness or effects on other cranial nerves, and all other findings were normal.

Brain MRI using long TR sequences showed extensive hyperintensities merging together along the calloseptal interface and periventricular deep white matter; these features were already known. The scan also showed a small hyperintensity surrounding the fourth ventricle in the posterior pontine region that had not appeared in previous studies (Figs. 1 and 2).

CSF study revealed oligoclonal bands of IgG, but they were absent in serum; there was also an increase in intrathecal IgG production. Additional tests (full blood count, biochemistry test, autoimmunity test, serology test) all yielded normal results.

The patient was treated with IV bolus of methylprednisolone dosed at 1g/24h over 5 days. Ocular palsy was observed to improve slightly; bilateral internuclear ophthalmoplegia and partial, asymmetrical recovery of abduction were also apparent. By the last check-up, performed 6 months after symptom onset, recovery was complete.

Oculomotor impairment is a very frequent finding in the course of MS. Of all the different types, internuclear ophthalmoplegia, which results from lesion to the medial longitudinal fasciculus, is considered a sign of the brainstem impairment typical of the disease. Extension of the lesion, which by its proximity will affect the abducens nucleus and/or adjacent pontine reticular formation, will result in horizontal ophthalmoplegia in which only the eye contralateral to the lesion performs adduction; this has been called 'one and a half syndrome'.¹

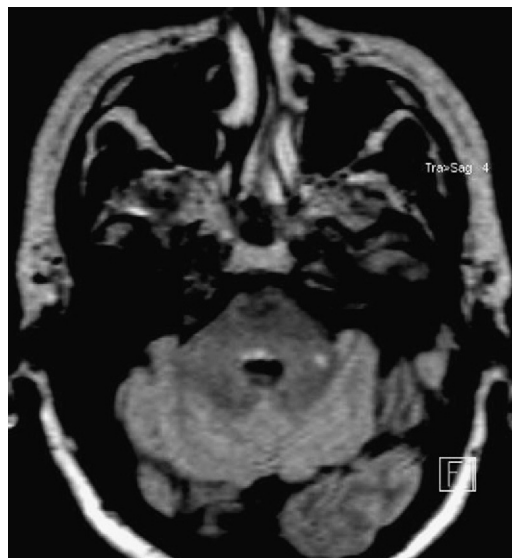


Figure 1 Brain MRI scan with axial 3D FLAIR sequence.

Far more uncommon is the appearance of complete horizontal ophthalmoplegia as the cause of a demyelinating lesion like the one described here. Very few cases have been published in the medical literature. This syndrome was recently named '1 + 1 syndrome'.²

This case displays bilateral impairment of the abducens nucleus and adjacent pontine reticular formation. It has also been described as the result of damage to the fibres of the fourth pair at the emergence of both nuclei with impairment of the medial longitudinal fasciculus.³

Impairment of the abducens nucleus tends to be accompanied by impairment of the facial nerve that surrounds it before continuing on to emerge laterally in the pons.⁴

In our case, absence of facial palsy indicates that the former mechanism is more likely, as can be deduced by the brain MRI scan. One case series on ophthalmoplegia in which researchers correlated clinical findings with cranial MRI findings includes a case of complete horizontal gaze palsy with a discrete lesion restricted to the midline of

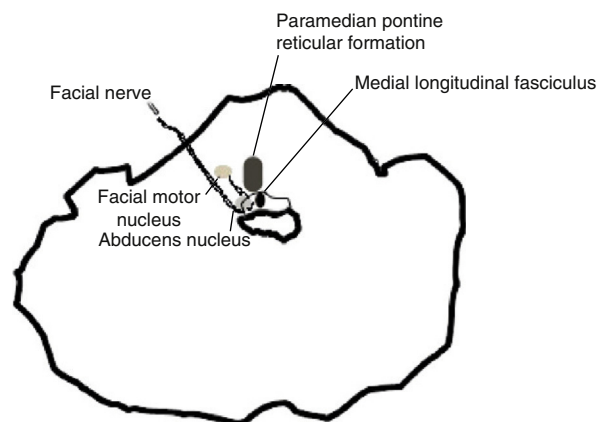


Figure 2 Schema illustrating the lesion observed in brain MRI.

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the dorsal pons. There was no apparent compromise of the abducens nucleus or the paramedian pontine reticular formation, as in the case we present. In our case, independent from impairment of the medial longitudinal fasciculus, the nucleus raphe interpositus ventral to that structure may be responsible for gaze paralysis.⁵

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Vocal cord paralysis as a manifestation of myasthenia gravis with anti-MuSK antibodies[☆]

Parálisis de cuerdas vocales como forma de presentación de miastenia gravis con anticuerpos anti-MuSK

Dear Editor:

Patients with myasthenia gravis with antibodies to muscle-specific tyrosine kinase (anti-MuSK antibodies) represent a subgroup whose characteristics differentiate them from patients with acetylcholine receptor antibodies. This disorder is predominant in women, and age of onset is typically around 40 years. Patients develop predominantly facial and bulbar symptoms and experience frequent episodes of respiratory failure. They also exhibit poor tolerance for or lack of response to cholinesterase inhibitors.¹ Many patients experience rapid decline at onset and plasmapheresis is the treatment of choice in some hospitals. However, long-term prognosis resembles that of patients presenting myasthenia gravis with acetylcholine receptor antibodies.²

We present the case of a 46-year-old woman with no relevant medical history. She was admitted to the emergency department due to a 3-week history of dyspnoea with moderate exertion, predominantly in the morning, associated with dysphonia and stridor. She presented no other bulbar or ocular symptoms and no limb weakness.

General examination yielded normal results. Neurological examination revealed dysphonic voice associated with stridor, which worsened with repeated efforts. It also revealed predominantly right-sided eyelid ptosis which also intensified with repetition. No ophthalmoparesis or any

other pathological signs were observed during the examination. Direct laryngoscopy revealed vocal fold abduction paresis that had reduced the abduction angle by 20°. A Tensilon® test yielded negative results.

Results from the blood test, including acetylcholine receptor antibodies and calcium channel antibodies, were negative. The patient tested positive for anti-MuSK antibodies: 9.0 nmol/L (normal <0.05). Chest radiography and CT were normal. Electromyography (EMG) showed increased jitter in the frontalis muscle and low-frequency repetitive nerve stimulation of the orbicularis oculi showed a significant decrementing response.

Treatment with pyridostigmine at doses up to 180 mg/day did not improve symptoms and was poorly tolerated, causing diarrhoea and nausea. We prescribed prednisone at a dose of 1 mg/kg/day, which lessened symptoms until the patient was asymptomatic. The dose was reduced to 20 mg/day during follow-up, as greater decreases can lead to stridor, eyelid ptosis, and diplopia.

Vocal cord paralysis can be due to multiple disorders, some of which are neurological. Paralysis causes an increased resistance to airflow, and therefore dysphonia and stridor, as a consequence of weakness of the posterior cricoarytenoid muscles. Although this is rare, vocal cord paralysis may indicate onset of myasthenia gravis. Despite the low frequency of anti-MuSK antibody myasthenia gravis, several cases with a similar effect have been reported^{3,4} because this type of myasthenia gravis mainly affects bulbar muscles. In the cases described to date, including ours, paralysis affects abduction and not adduction, and therefore the condition would preferentially affect posterior cricoarytenoid muscles.

Presence of dysphonia and stridor that intensify with fatigue should lead us to suspect bulbar myasthenia gravis. Lack of response to cholinesterase inhibitors and negative results from a test for acetylcholine receptor antibodies would not rule out this possibility. We have seen that these results are negative in cases of myasthenia gravis with anti-MuSK antibodies. Neurophysiological studies yield data typical of neuromuscular junction disease, including a decrementing response to low-frequency repetitive nerve stimulation and pathological jitter. Another entity which

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